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master plan

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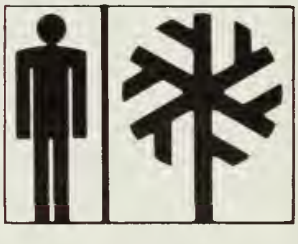
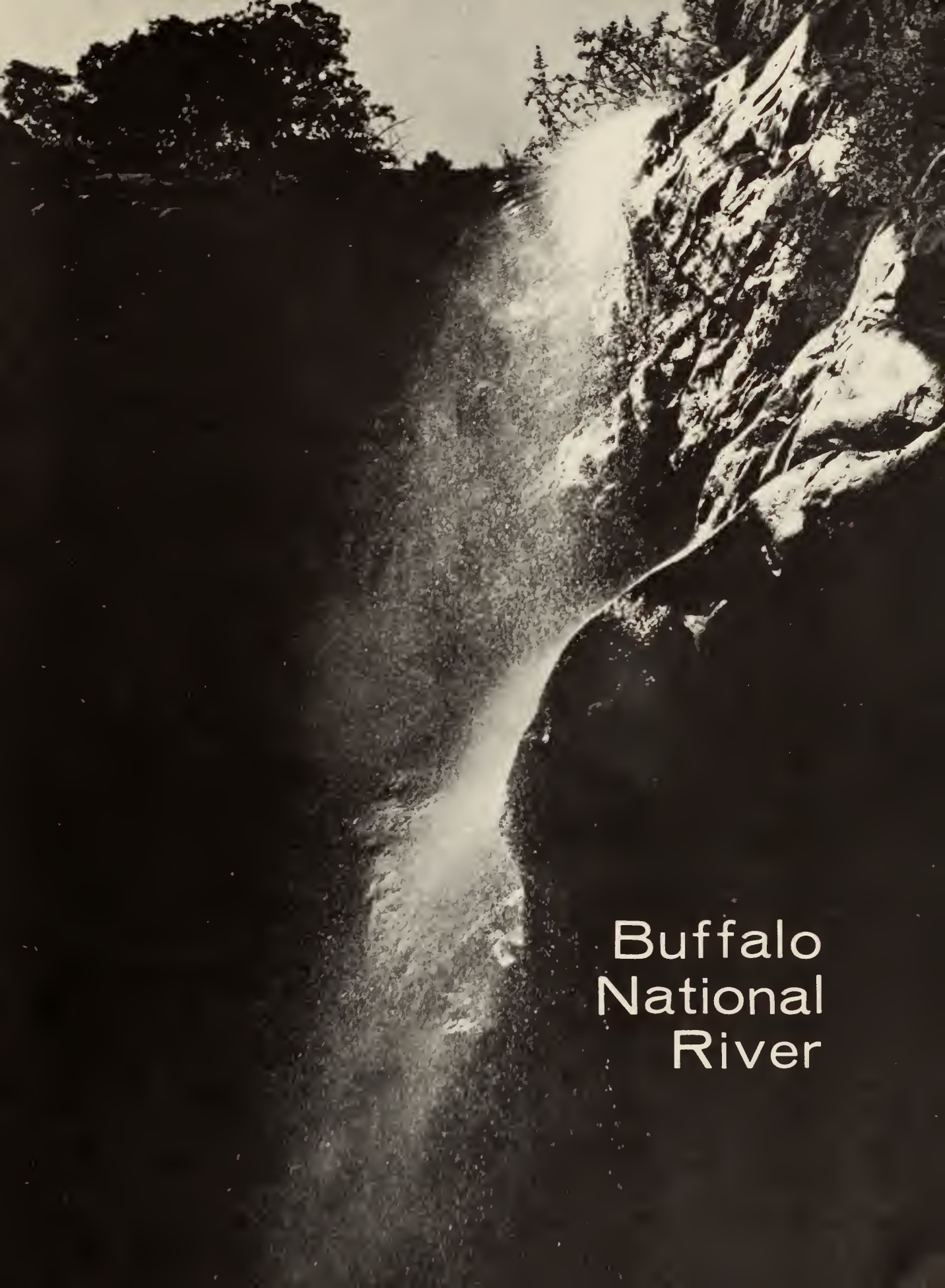


NATIONAL RIVER / ARKANSAS

master plan


Buffalo
National
River

This planning publication has neither been approved nor disapproved. Its purpose is to provide planning information and alternatives for further consideration and discussion, and it may undergo considerable revision.

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An Essence

The very base of the river's appeal lies in its clear, flowing waters.

Take pure, clear, flowing water: send it down a 132-mile meandering course; pour it over rapids; strain it through gravel bars; drift it through long pools; let it caress tree-covered banks. Then dot a valley bottom with open grassy meadows; punctuate the shores with frequent tall bluffs; and fill the countryside with steep, wooded hills. Now interject an occasional turtle sunning on a log in the water; slide in a snake searching for a frog; add a bass breaking the water surface; and stand a heron stalking at the river edge. Accent the whole with birds warbling in the trees and insects buzzing close above the water. Finally, place yourself in a canoe drifting down the river surrounded by the peaceful and inspiring mood of these natural elements. Now you have the essence of the Buffalo National River.

But on the land there is even more: caves with hidden formations and untrodden passageways; solution pits and sinks and underground waterways; tall cliffs on sidestream courses that force long waterfall leaps; ancient Indian dwelling sites; abandoned pioneer farmsteads on ridgetops hidden in regrowing forests; a pastoral scene disappearing most places – perpetuated here by residents still living off the land; a wildflower unexpected.

Establishing A National River

The Buffalo deserves national attention not for any single quality, but for an array of qualities that make it an outstanding remnant of early America, worthy of saving.

Already, generations have known the Buffalo River – floating, fishing, swimming, enjoying it. As early as 1935, establishment of Buffalo River State Park recognized the river's outstanding scenic and recreational resources. But in spite of subsequent proposals to dam the river and even flood the park itself, little land was set aside. There were still many areas like the Buffalo.

In the late 1950's, the National Park Service began a nationwide inventory of undeveloped streams to identify those for potential designation as parks. It was soon realized that values such as those at the Buffalo were becoming more scarce as water-resource developments progressed. In 1961, Arkansas Senator Fulbright expressed his support for adding the Buffalo River to the National Park System. The next year the Ozark Society was founded as a regional conservation organization for saving the Buffalo.

In April of 1963, a National Park Service study determined that the Buffalo River was nationally significant. The Secretary of the Interior approved the recommendation to preserve the stream made by his Advisory Board on National Parks, Historic Sites, Buildings and Monuments.

Conflict over the Buffalo arose in 1964 with renewed proposals to dam the river, this time in its midsection near Gilbert. That same year, an Arkansas-sponsored planning study recommended expanding Buffalo River State Park and "even perhaps declaring a major portion of the entire river a State monument." Sentiment was now widespread for preserving the Buffalo, and Governor Faubus issued a statement late in 1965 favoring a

national river.

The first congressional legislation to establish the national river was introduced in 1967, the same year Ken Smith's *The Buffalo River Country* was published by the Ozark Society. The Park Service released its first *Master Plan for a Proposed Buffalo National River, Arkansas* the following year. Congressional hearings were held in May 1969, April 1971, and October 1971, confirming the expected widespread support from many levels of government, private citizens, and concerned groups. Recognizing the need of the general public for this special kind of water recreation, the Congress passed the act authorizing the Buffalo National River. The act was approved by the President on March 1, 1972, giving a means of preserving the area.

The act expresses the special character of the Buffalo River and provides an unusual blend of uses:

> The unique and scientific features of the area are to be conserved and interpreted.
>
> The river is to be preserved as a free-flowing stream.
>
> Fishing and hunting opportunities are to be provided.
>
> A wilderness study is to be made.

Because the Federal Government owned little land within the proposed boundaries, methods of acquiring land and necessary rights are included in the establishing act, as are means for compensating owners. State-owned lands may be transferred to the National Park Service outright, with reimbursement for certain developments. Federal property (notably that in Ozark National Forest and Bureau of Land Management land) can be transferred with the concurrence of the agency having custody. Although the total acreage is limited to 95,730, boundaries can be adjusted, to a minor degree, from those specified. Restrictions are imposed on water-resource development projects that would affect the national river. And finally, annual funding limitations on development are set for fiscal years 1974 through 1978, peaking in 1975 and 1976.

THE REGION

Imagine a relief map across the central United States from the Rocky Mountains on the west to the Appalachians on the east: plains slope almost

imperceptibly from each direction toward the Mississippi River in between. In the eastern part of this area the land rises in only one place – near the middle, where the Ozark Highlands extend from Arkansas north into Missouri and west into Oklahoma. Here the Buffalo River begins, flows down to the White River, which winds on its way to the broad alluvial valley of the Mississippi, and then on to the sea.

This unusual topographic situation gives the Ozarks and the Buffalo their special interest. Not only do the hills themselves provide relief from the monotony of the adjacent plains, but their very existence offers refuge for plants and animals. As climates optimum for individual species have waxed and waned, the hills have come to support an interesting diversity of life missing in the flatlands.

It is from the adjacent plains that most visitors to the Ozarks presently come. More than 10 million people live within 250 air miles of the Buffalo River. The national river, however, provides for distinctive natural values and unique human experiences of truly national importance, so an even wider zone of influence in drawing visitors is anticipated as it and other regional attractions become more widely known. For instance, an economic study by the University of Arkansas has estimated an annual visitation to the new park of 1¾ million people within its first 5 years of operation. Because of the time people will invest in a typical visit, it is likely that many visitors will utilize overnight accommodations or campgrounds near daytime activity areas.

Many recreational opportunities exist in the Ozark region:

Ozark and Mark Twain National Forests.

State parks and forests.

Public hunting lands.

Large reservoirs with developed recreation sites – Bull Shoals, Beaver, Norfork, Table Rock, and Greers Ferry, in the immediate vicinity, with 10 million visits annually.

About 50 commercially operated caves, five lying within the Buffalo River watershed, and the newly developing Blanchard Springs Cavern of the Forest Service.

Dogpatch USA amusement park and convention center.

Ozark Region

Buffalo National River

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Ozark Folk Culture Center.

National Park Service historic areas – Pea Ridge, Fort Smith, George Washington Carver, Wilson's Creek.

Arkansas Post National Historic Site.

Hot Springs National Park.

In addition, several Ozark streams provide float-trip opportunities, but a survey shows most do not match the quality of the Buffalo. They either flow through developed areas, are bordered by roads or railroads, have scenery of little appeal, or are scheduled to be dammed. Exceptions are the Current River and Jacks Fork of the Ozark National Scenic Riverways, the Eleven Point River – already a component of the National Wild and Scenic Rivers System – and the North Fork of the White River.

This quantity and variety are fortunate, for diversity is needed to satisfy recreational demand, and the Buffalo thus can be reserved for special experiences that the other areas cannot provide. The corollary is that it also allows the Buffalo to *not* provide experiences that other areas offer. In short, although the Buffalo National River is a park for people, public use will be oriented to the resource itself; developments for mechanized camping, extensive museum displays, involved historic preservation, regular cultural re-enactments, or structured cave tours, are being handled more appropriately by others.

ACCESS

Access to and through the Ozarks is almost entirely by private automobile. This is expected to continue. There is airline service into the region through the Harrison airport. No road parallels the Buffalo River, but several cross it and provide approaches to all major river sections:

Highway Route	River Section	Bridge Crossing	Average Cars per Day (higher in summer)
Arkansas 43-21-74	Extreme upper	Boxley and Ponca (former Lost Valley State Park area)	180

from I-44 (60 miles)

from Ozark National Scenic Riverway (105 miles)

Harrison

Yellville

Dogpatch USA

Western Grove

Pruitt

Jasper

Ponca

Boxley

Woolum

Gilbert

Rush

White River

Buffalo River

Ozark National Forest

Richland Valley

Marshall

from I-30 and I-40 (50 miles)

scenic route from I-40

from I-40

Buffalo River Drainage

Ozark National Forest

Access Routes

Buffalo National River

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Highway Route	River Section	Bridge Crossing	Average Cars per Day (higher in summer)
Arkansas 7	Upper	Pruitt (Jasper-Dogpatch USA)	1,800
Arkansas 123	Upper middle	Carver	330
U.S. 65	Lower middle	Tyler Bend (Marshall-St. Joe)	2,200
Arkansas 14	Lower	Buffalo Point (former Buffalo River State Park)	550

The three most important crossings are at Pruitt, Tyler Bend, and Buffalo Point. Although the Buffalo Point crossing is used much less frequently than the other two, it is of interest to this study to note that most cars using this route also enter the area of the former State park.

Unmarked gravel or dirt paths over rough, hilly country approach the river at various points, some crossing on low-water bridges or fords. The road system provides good circulation with Harrison, the Boone County seat of 7,239 people. Travelers' services are located there and at Dogpatch USA, Jasper, Marshall, Buffalo Point, and a few other adjacent sites. It is anticipated that more tourist facilities will be developed as demand increases.

THE WATERSHED

The Buffalo River drains an elongated basin, 22 by 70 miles, and covers 1,338 square miles. Flowing from the Boston Mountains on the west to the White River on the east, it follows a 148-mile winding course. Small tributaries enter at intervals. In its upper reaches, it drops steeply, but along the lower 100 miles its average fall is less than 4 feet per mile.

The river and its tributaries have entrenched themselves below former plateaus, and as a result the land is rough-to-mountainous, with the original

level surfaces eroded away except for linear tracts along ridgetops. Discontinuous floodplain crescents dot the alluvial stream valleys with the only other flatland in the region.

Differences in relief range from 900 feet in the western headwaters, underlain by shale and sandstone, to 700 feet in the downriver portions where limestone and dolomite occur. Forests of pine, cedar, and hardwoods cover the slopes and tops of most ridges in the basin.

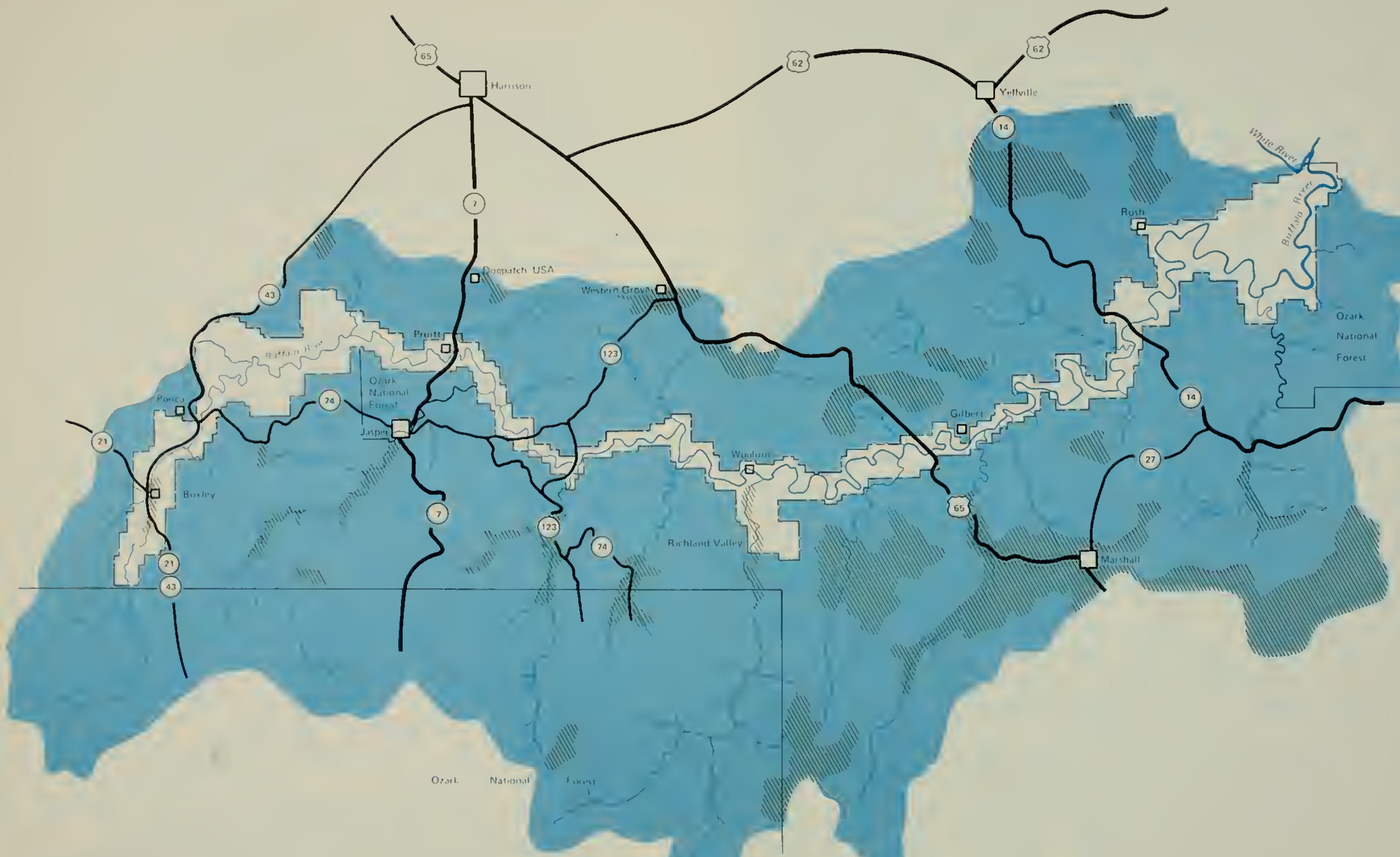
The climate of the Buffalo River basin is characterized by long, hot summers and relatively short, mild winters. Rainfall varies between 30 to 80 inches and averages 49 inches annually, with 3 or 4 inches each month – except in April, May, and June, which receive 4 to 6 inches each. In spite of this fairly uniform precipitation, runoff varies widely by season and nearly dry river sections are common in late summer and fall, except in the lower reaches. Summer day temperatures are often above 100°F; zero temperatures occur only occasionally; and freezing is confined to late October-late March. Average winter snowfall is 12 inches; relative humidity ranges from moderate to quite high; tornadoes often occur during spring and summer months; and the growing season is 200 days annually, indicating that vegetative recovery from impacts of construction or overuse would be fairly rapid on good soils.

Most of the land is now poor agriculturally. Cleared acreage is generally confined to sparse bottomlands and upland ridges, and is used to grow hay or as pasture for cattle; forests have been cut over and are regrowing; the land no longer produces sufficient income to sustain a larger population; and there is little industry. Even tourism has not yet been developed adequately. Family income falls far below the national average, and many young adults have migrated to cities to find better jobs. Small, poor farms have either been consolidated into larger holdings or abandoned to the forest. This land is now ripe for purchase by those seeking land for investment purposes and those seeking refuge from the large urban areas, a trend now common in northwestern Arkansas.

One-third of the basin is under Federal administration – 22 percent within Ozark National Forest and 11 percent in Buffalo National River. Of the remainder, most is thinly settled. The population trend has been downward ever since the maximum was reached in 1910, however, in the last decade this trend has leveled off. Today about 13,000 people live there, only half as many as in 1940. The largest town within the watershed is Marshall, with around 1,100 people; next in size is Jasper, with about 360. The only

Watershed and Land Use

Buffalo National River



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"towns" on the Buffalo River itself are Gilbert, outside the national river boundary, with about 50 people, and Pruitt, inside, with about 75. Counting both seasonal and permanent residents, there are 350 persons living within the boundaries, with an average density of two to three per square mile. As of April 12, 1971, there were 86 farm units, 47 year-round residences, 44 seasonal cottages, 12 stores, 2 ore-processing plants, 2 lumber mills, 2 motels, 5 churches, and 15 cemeteries on approximately 1,122 tracts within the boundaries.

Although parks are not generally established for local pecuniary benefit, but rather to provide recreational opportunities for the people of America, the residents of the Buffalo River valley have been asked to share their treasure, and in return they will be able to extract some reimbursement. Those having rights on lands needed for the national river will receive direct payments, and economic studies indicate that tourists may bring in substantial income and support numerous new jobs. Still, to many this will seem inadequate compensation for their land and way of life. After years of attempted self-sufficiency and comparative isolation, resistance to outsiders with unfamiliar customs and ideas may occur.

Because there are few industries in a watershed that has a sparse population and limited development, there are few sources of pollution to the Buffalo. This is important as a factor in maintaining the purity of the river water resource to provide a quality visitor experience. Because 89 percent of the drainage basin is not only outside the national river area but upslope from it, activities outside the boundaries are of vital concern if the excellent quality of the water is to be maintained. Agricultural practices in the basin in some cases include forest clearing for pasture and use of chemical pesticides and herbicides — all detrimental to the environment. Of course, facilities for tourists must be planned so as not to degrade the water resource.

THE RIVER AND ITS SETTING

The River

The Buffalo River has cut deeply into the bedrock, leaving tall, vertical bluffs standing at riverbends. It follows a meandering course through its alluvial floodplain. The channel is stable as the bedrock becomes either exposed or covered with a thin layer of gravel and sand. The river is characterized by quiet pools separated by short riffles.

The water's chemical quality is exceptional. It is a transparent green color except after storms. Water — in pure and natural form, sparkling in rapids, lustrous in laminar flow, or crystal-like where still — fascinates man, perhaps more than any other outdoor resource.

The first 16 miles of the river lie within the Ozark National Forest. It then flows 132 miles within the national river boundary past wild and pastoral lands. Small acreages, difficult access, and frequent flooding have kept the valley undeveloped.

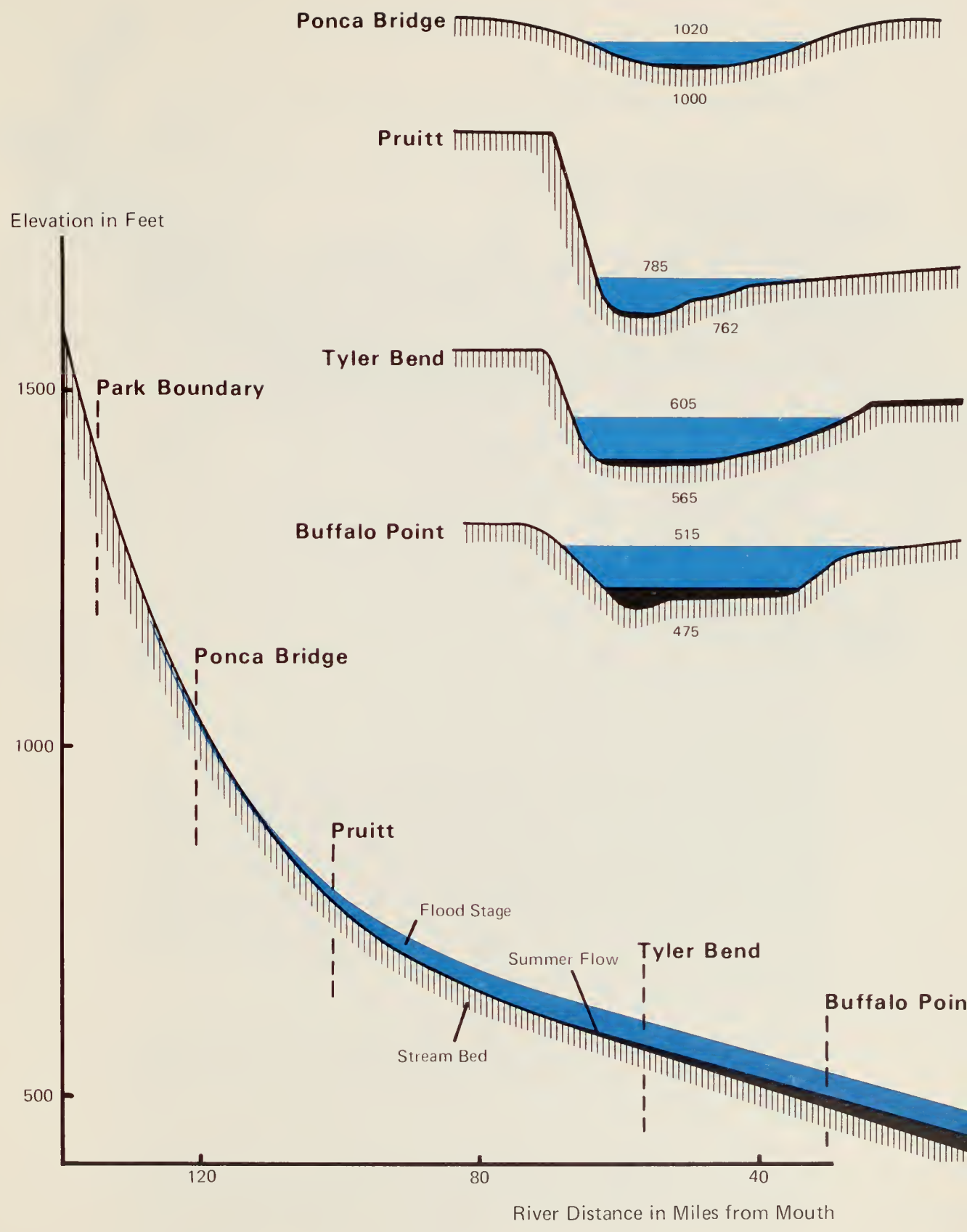
Riverflow varies not only by season but also according to annual storm trends. Floods occur on an average of every 2 years, although years with any flooding often have two or more, most frequently in the spring but potentially any month. The highest floodcrest occurred near Tyler Bend (U.S. 65), 40 feet above the normal river level, with even greater volumes downstream at Buffalo Point and the rivermouth. Many floods flow over various floodplain areas, but both the river valley and its development by man are compatible with the floods, and they cause only temporary problems. Because runoff from the basin is swift, river levels rise rapidly during storms and can cause inconvenience, if not disaster, to inexperienced or ill-prepared floaters or campers.

During the spring months, floating on the Buffalo is possible from Boxley to the mouth. Later in the season and during drought years, streamflow diminishes so that the floatable length of river is shorter.

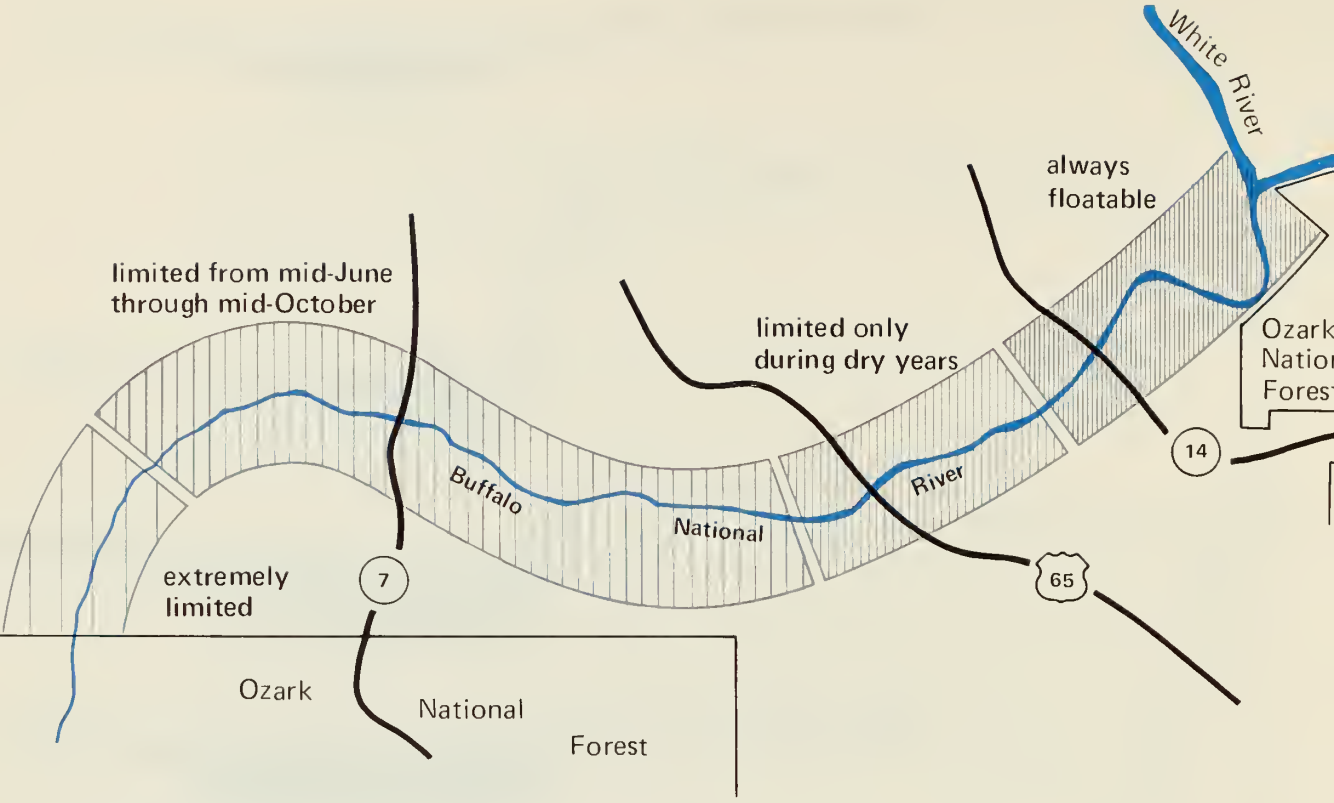
From Ponca to Pruitt, the stream falls an average of 13 feet per mile. Frequent rapids and many boulders challenge the floater here, while high bluffs provide spectacular surroundings.

From Pruitt to the U.S. Highway 65 bridge the average gradient is 5 feet per mile, and from there to the mouth it is about 3 feet per mile. In these quieter reaches, the river pools and the high forested hills sloping to the valley bottom offer a peaceful environment. Rapids here are less steep and can be negotiated more easily. Pools are deeper and volume of flow is greater.

Although actual speed for floating is usually about 2 miles per hour, stops for lunch, viewing, nature study, and swimming reduce the average to about 10 miles a day. Floaters camping overnight in the past used gravel bars as a place to pitch their tents, and many of them fished.



River Profile



River Floatability

Buffalo National River

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Natural History

"Diversity for mid-America" is the biological theme of the Ozark Highlands. It is considerably richer in plant and animal species than surrounding regions. Varied slope exposures and altitudinal ranges have provided the requisite habitat. A few endemics (species found nowhere else) have developed in response to the unique conditions, but most migrated across the Mississippi Valley during the Ice Age. A few western mammals and birds, typified perhaps by the roadrunner, are at the eastern extremity of their ranges. The Buffalo River valley mirrors this diversity.

Plant Life: Although more than 40 tree species grow in the valley, they fall generally into major forest associations typical of the two general topographic sites:

Upland oak/hickory – comprised of six species of oak and three of hickory, with smaller numbers of winged elm, red maple, sassafras, persimmon, walnut, hackberry, blackgum, shortleaf pine, and red cedar. Richest development is on north slopes and in cool, shaded ravines

where beech, linden, yellowwood, ash, magnolia, and sugar maple also grow.

River floodplain – sweetgum, sycamore, willow, elm, river birch, and boxelder.

The openings cut by the river, man, or fire, in many cases provide the "edge" habitat of variety and animal activity so appealing to man for wildlife observation. Special niches are covered with "fernfalls," and in spring redbud, dogwood, serviceberry, and azalea provide fine flower shows. Autumn coloring of the deciduous forests is already attracting large numbers of tourists.

Animal life: Included are white-tailed deer, coyote, and bobcat, but none in abundance. Beaver and turkey, once extinct locally, have been re-established. The black bear may also return to its old haunts along the Buffalo if given adequate protection. It now exists in the nearby national forest. Timber wolf, elk, mountain lion, and buffalo are gone from the region. Other animals reportedly present here – of special interest because of their scarcity nearly everywhere – are mink, river otter, and, notably, red wolf. The extinct passenger pigeon was once marketed locally. Decimation of the animals occurred around the turn of the century, but State game laws instituted in 1915 have helped reverse the trend. After 1920, with the gradual improvement of forest from an overlogged condition, many of the smaller animal species began restoring to their former population levels. The national river will assist this recovery by providing land management more consonant with wildlife needs. Many species of waterfowl are seen along the Buffalo River during spring and fall migrations, and over 250 resident and migrant bird species have been observed. Moderate to large populations of quail, rabbit, squirrel, fox, and other small game support present hunting activity. There are also raccoon and opossum.

The Buffalo is nationally outstanding for the many species of fishes. It is a "classic" stream for smallmouth bass, whose original habitat within the Mississippi Basin has been largely altered or destroyed. Largemouth bass, rock bass, spotted bass, bluegill sunfish, green sunfish, redhorse, gar, and catfish are also present. Among the unusual species are darters, northern studfish, and chestnut lamprey. It is interesting to note that the Buffalo is an isolated ecological unit protected from the invasion of warm-water rough fish by the chilled water of the White River below Bull Shoals Dam. The Buffalo's waters are too warm for trout.

Geology and Landforms: The rocks of the Buffalo River are entirely sedimentary, laid down in an ancient marine basin. Over its 300-million-year history it was variously uplifted and eroded and then again submerged below the sea to receive more deposits. Deposition of the strata was thus discontinuous, and unconformities have been left in the sequence, observable even by laymen. Most of the rocks contain invertebrate fossils – trilobites, brachiopods, crinoids, cephalopods. Today the rocks are again uplifted, and superimposed on them by ongoing erosion are deeply incised stream meanders, at least two peneplains, high bluffs, waterfalls, springs, and hundreds of solution-pits and caves. Two features are especially noteworthy; one, the 200-foot waterfall in Hemmed-in-Hollow, which is the highest in the entire region between the Appalachians and the Rocky Mountains; the other, the gypsum formations in Beauty Cave, which are outstanding for crystal size as well as variety.

Indians

The area along the Buffalo has been occupied for at least 9,000 years. The earliest inhabitants were hunters and gatherers, and later, as knowledge of agriculture was acquired, they built small semi-permanent villages in the bottomlands. Others continued to use shelter caves under the bluffs; one of these is called Cob Cave because of the abundance of tiny corncobs it yielded. Although evidence is lacking, it seems possible these Indians may have maintained clearings for their crops by grubbing brush and tree seedlings after flood or fire, or even through the use of fire.

Modern History

When explorers found Indians using the area as a hunting ground, it was the beginning of its modern history. Buffalo were reported in the western end of the valley until 1830. Some say this animal gave the river its name, but others claim that settlers arriving from Tennessee's Buffalo River named their new home after their former one. Early settlers cleared bottomlands and farmed, and their toil is still reflected in the pastoral scenes of Richland Creek and of Boxley, with its water mill, grindstone, flour-screens, and cotton gin. During the Civil War there were skirmishes and raids, recalled in part now by the broken relics of a Confederate saltpeter works. Homesteading continued until all available land was settled in 1910. Today the homesteader's simple existence is readily imagined when viewing any of the many plain log dwellings along the valley. The virgin timber of the forest was cut and slid over the bluffs into the river to float to market. The sites of the "tie slides" are still known to oldtimers. Zinc and lead were discovered and have been mined at almost 100 sites in the river valley, peaking between

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Buffalo National River

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1914 and 1917. Rush, once a busy mining community, has reached ghost-town status. Although some who participated in these events remain, the most pervasive human theme is that of people whom the land could not support. This is evidenced in overgrown clearings, vacant barns, and foundations of homes now gone.

Present Use

The river valley is being used today, even without development for recreation. In 1963, a drought year, floaters were estimated at 10,700. The Bureau of Sports Fisheries and Wildlife felt, in 1964, that the river was then providing over 27,000 man-days of fishing to residents of 22 States, and 7,400 man-days of hunting. Buffalo River State Park has also attracted a clientele beyond Arkansas, for of the 290,000 visitors who stopped here in 1962, 37 percent came from out of State. In the decade from 1962 to 1972, State park visits increased 220 percent to 634,000 (1971 visitation). After recent facility expansion, further increase can be expected. The Lost Valley State Park in the upper river valley, dating from 1966, had 29,232 visitors by 1972. These two State parks will become part of the national river. An estimate of total use within the national river during 1972 is 800,000 persons.

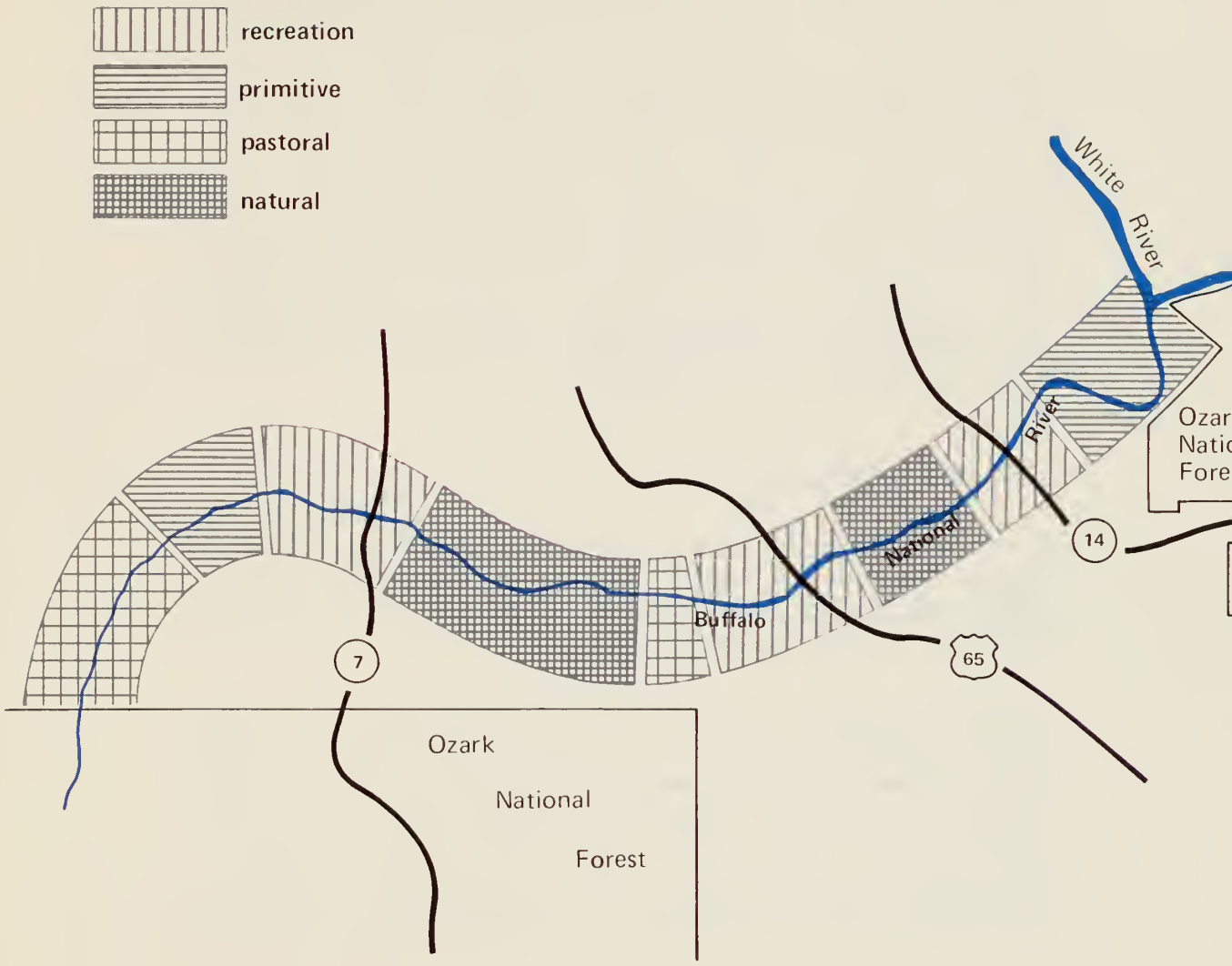
Both quantity and character of use vary by season, not only in response to leisure-time determinants, such as school schedules, vacation times, weekends, and holidays, but also to weather and other natural conditions. Various stretches of the river are best for certain purposes at different times. Swimming is most popular on hot summer days; and spring blossoms, waterfalls, and wildflowers, as well as autumn color, have their special periods of attraction.

Before the establishment of the national river, visitors were using the area much as they will in the future, although to a lesser degree because of present limited access and private land restrictions. They explore backcountry roads, marvel over cabins, hike through fields, forests, and canyons, investigate caves, float and fish the river, and hunt the animals. None of these uses poses particular problems at present levels; however, conflicts can be expected as volume of use grows, for floaters, swimmers, and fishermen have different interests.

Thus we have a background of information of the national river's establishment and characteristics. The plan that follows is a proposal for visitor use and protection of the Buffalo River's unique resources.

The Plan

The Buffalo River is recognized as the central element of the whole array of natural and historical features in its setting. It has clean, clear water uniting all elements in philosophical coherence. Difficult to grasp, but important, it is a symbol to the Nation – a free river preserved to flow through open space for all time as a remnant of our original homeland. Add to this the opportunity to float, fish, swim, and explore in an attractive near-wild setting, and the river valley can be seen yielding experiences of a kind and quality that are becoming rare in urbanized America. The river's ability to stir our higher senses and feelings about the beauty of the natural world makes it worthy of saving.



Concept for Land Classification

Buffalo National River

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America now has its first national river. The citizens have debated, their Congress has decided, and the National Park Service is now called upon to express a new park concept in terms of optimum usefulness of the area's special resources. It is the intent of the present master plan to provide concepts for developing and managing the area for public use; but perhaps most important is the need to preserve the near-natural environment of the area and develop the necessary facilities that will take full advantage of the natural systems to conserve energy, experiment with techniques of such conservation, and coordinate efforts to keep all pollution at the very lowest level. In doing so the naturalness can best be exemplified, while assuring the finest quality in the recreational experiences provided. The Buffalo National River is placed in the recreational category, but the emphasis on preservation will be recognized as the featured recreational resource.

LAND CLASSIFICATION

Classification of lands for various uses ensures protection of basic resources, allocates land for public facility development, guides private uses, and provides "threshold" or "buffer" lands between those areas to be developed intensively and those to remain primitive.

To provide a general structure for planning and development, river lands have been classified in accordance with the recommendations of the Outdoor Recreation Resources Review Commission. Buffalo River contains five of the six classes of land: Class I, high density recreation areas – none; Class II, general outdoor recreation areas; Class III, natural environment; Class IV, outstanding natural areas; Class V, primitive areas; and Class VI, historic and cultural areas. These are identified in the land classification map on page 25.

Using this system as a framework, the area's resources have been divided into several conceptual categories, each providing for a specific type of development and use, while at the same time remaining closely associated with the others.

The concept for dividing the national river into various broad land classes is to assure the visitor a variety of experiences as he passes through the different environments – pastoral, primitive, recreational, and natural. This concept envisions a further breakdown of the usual land classification, dividing the natural environment zone (Class III) into natural and pastoral, thus relating to the acquisition zoning plan. The natural is to revert to normal succession of growth, while the pastoral is to be perpetuated. The

Land Classification Plan

Buffalo National River

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pastoral can then be acquired on an easement basis or leased to maintain this scene.

VISITOR USE AND ASSOCIATED DEVELOPMENTS

Concept of Use

Buffalo National River is a three-way park to users: it is an on-the-way point of interest for the tourist; the "ol' swimmin' and fishin' hole" for local users; and a destination area for the avid canoeist. Visitor-use developments will provide opportunities for the visitor to share activity and discovery with others, as well as to be alone with one's own senses. The spontaneous and individual types of experience will be preserved – such as unguided cave exploration, private canoe trips, and "wild" fishing and hunting. Experiences may be passive – sunning, floating, or active, involving a total commitment of the body – negotiating a rapids, swimming in a deep hole, hiking all day, and camping in the woods. Devices to promote use will include bicycle trails, motor nature routes, primitive riverside camps, floatboat rentals, interpretive cave tours, wildflower walks, swimming beaches, stabilized historic cabins, fishing, and hunting. All will be designed for compatibility with the environmental carrying capacity and arranged in space or time so as to maintain dispersion of users below levels that would detract from the particular activity. Intensive recreation, such as water skiing, amusement parks, trail-vehicle use, and cultural re-enactments will not be accommodated at the Buffalo, because such opportunities are adequate elsewhere in the region.

Carrying Capacity

Many factors have a bearing on the maximum number of visitors able to use an area. This maximum capacity has been estimated at 25,000 per day for Buffalo River. However, this daily capacity could not be maintained through an extended period of time without causing a negative impact on the resources and the visitor experience. Consequently, a maximum annual capacity would be approximately 2,500,000 and facilities will be designed to accommodate these estimated visitor capacities. Extensive monitoring will continue and if excessive deterioration of the environment occurs, the carrying capacity will be revised.

Concept for Circulation

Visitors will be contacted at the interfaces between the national river and its access highways. Disruption to the natural setting at these crossings has already occurred, access is available, and use is already traditional. Formalized development here will allow uses to expand so that these sites also become centers of future public use.

The first purpose of these centers will be to orient visitors to the whole national river and its environs. Secondly, they will provide high-capacity recreational facilities oriented to the natural resources. The remaining purpose is to provide easy access to the river for the canoeist and johnboater. From these centers the visitor is given information that will ease his way to the interpretive and scenic features, or to a community service area for lodging, food service, and shopping.

Harrison, because its broad spectrum of present facilities and ease of access to all river points brings most visitors in contact with the town, will probably continue to be the main tourist center serving the national river. These same factors support Harrison as the site for administrative headquarters offices and some visitor information services. Other important communities within the area that will directly serve the visitors include Jasper, Marshall, and Yellville.

In keeping with the philosophy that the national river is to supply a special recreation experience and that its lands are to be kept in a natural state with only light development, additional overnight lodging, automotive camping, or food services will not be provided. Such an approach, it is hoped, will stimulate activity in the private sector and result in developments at the nearby communities of Harrison, Jasper, Marshall, and Gilbert. These communities are a short distance from the centers for public use and are essential in providing the related visitor services. Every effort will be made to encourage the communities to expand these facilities in a manner that will be compatible with the community, as well as attractive to the tourist.

To assure this, local zoning must be stimulated to assist in achieving adequate quality in developments. It is anticipated that the Ozark National Forest will continue its program of providing camping, thus helping meet the needs in both the rivermouth and headwater areas of the Buffalo River basin.

Development of roads and the routing of trails to emphasize points of interest within the national river area will be coordinated with programs on adjacent land areas that are being provided by other governmental agencies and private parties.

The Ozark National Forest presently serves the tourist; the development of the Buffalo National River will enhance the regional experience and make the national forest an even more important attraction. The unit contiguous to the lower Buffalo features the new Blanchard Springs cave development; here there are plans for adding campsites and day-use areas. Visits here will relate to the national river, so National Park Service access points and trails will be closely coordinated with Forest Service plans.

Plan For Visitor Use

Buffalo National River

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Information

The National Park Service has an obligation to inform the national visitor of the Buffalo River's recreational opportunities, program, facilities, and visitor services. Knowledge of the area is not widespread at present and if those coming from distant states are to have an adequate opportunity to experience this part of their heritage, they must be able to get information in advance. Perhaps most important is furnishing the public communications media with accurate knowledge about the area so they can make it available. Also important is distributing printed brochures through Park Service information offices and mail services to potential visitors. The area staff can take the initiative in this program, utilizing the assistance available through other National Park Service offices. Special information services will be provided at Harrison, Jasper, and Marshall.

Orientation

Upon arrival, visitors may stop at one of the contact stations at Pruitt, Tyler Bend, and Buffalo Point to receive information on activities and orientation to the park. Two types of visitors are anticipated at these facilities – those who stop only to find out what the national river is, and those who stop to get specific data on road, trail, or river conditions to help them enjoy their visit. To encourage proper use of the Buffalo National River, these facilities will also provide information about other types of recreation elsewhere in the region. Other methods such as signs, onsite personnel, and park folders will also be utilized.

Interpretation

This will be an important function at Buffalo River. The area is set aside for special activities: fishing, hunting, canoeing, caving, and exploring are all proper concerns, as are nature study and pioneer-cabin and ghost-town visits. Interpretive themes are to be based on experiences that are a kaleidoscope of pleasure and lighthearted learning. The visitor should receive a greater appreciation and understanding of the natural free-flowing-river concept, and be influenced to see its role in relation to other land uses. The degree of contrast between the natural sights, sounds, and smells at the Buffalo and those of his urban home will induce such thoughts. Environmental education programs will be provided, especially for regional school groups.

Mobile interpretive units of attractive design will be the key device to encourage onsite contact between the visitor and the park. Their use will free the visitor from having to spend time in the artificial environment of a closed building, learning about the out-of-doors. The varied features of the Buffalo River and the many seasonal changes support this medium. More traditional methods will also be used where appropriate – permanent interpretive

devices along waysides, nature walks, onsite personnel. Unusual activities could be especially appealing – coon hunts (without dispatching the coon, perhaps), river floats, fish-anatomy study, night prowls, beach picnics with fiddlers, and so forth. Safety tips for swimming, boating, and caving would be part of the program, as well as hunting and other aspects of the visitor-use and resource-management functions requiring communication to the public.

Recreation

There are six broad categories of use:

Bicycling – A bike trail is proposed along the river in the Tyler Bend area. Other possibilities exist in Boxley valley and on the abandoned railroad grade between Gilbert and Brush Creek, depending on the response to the Tyler Bend trail.

Roads – Certain existing roads will be improved to meet immediate circulation needs, as shown on the "Plan for Visitor Use." New roads within the boundary will be minimal, limited to those needed to serve developed areas and main scenic points. Some primitive roads will be kept to retain the cultural flavor of the region; others will be used administratively as fire roads and for maintenance of riverside campgrounds; still others will be closed to enhance the primitive character of certain areas.

Swimming – At developed areas, lifeguard-protected swimming beaches will have changing houses with sanitary facilities.

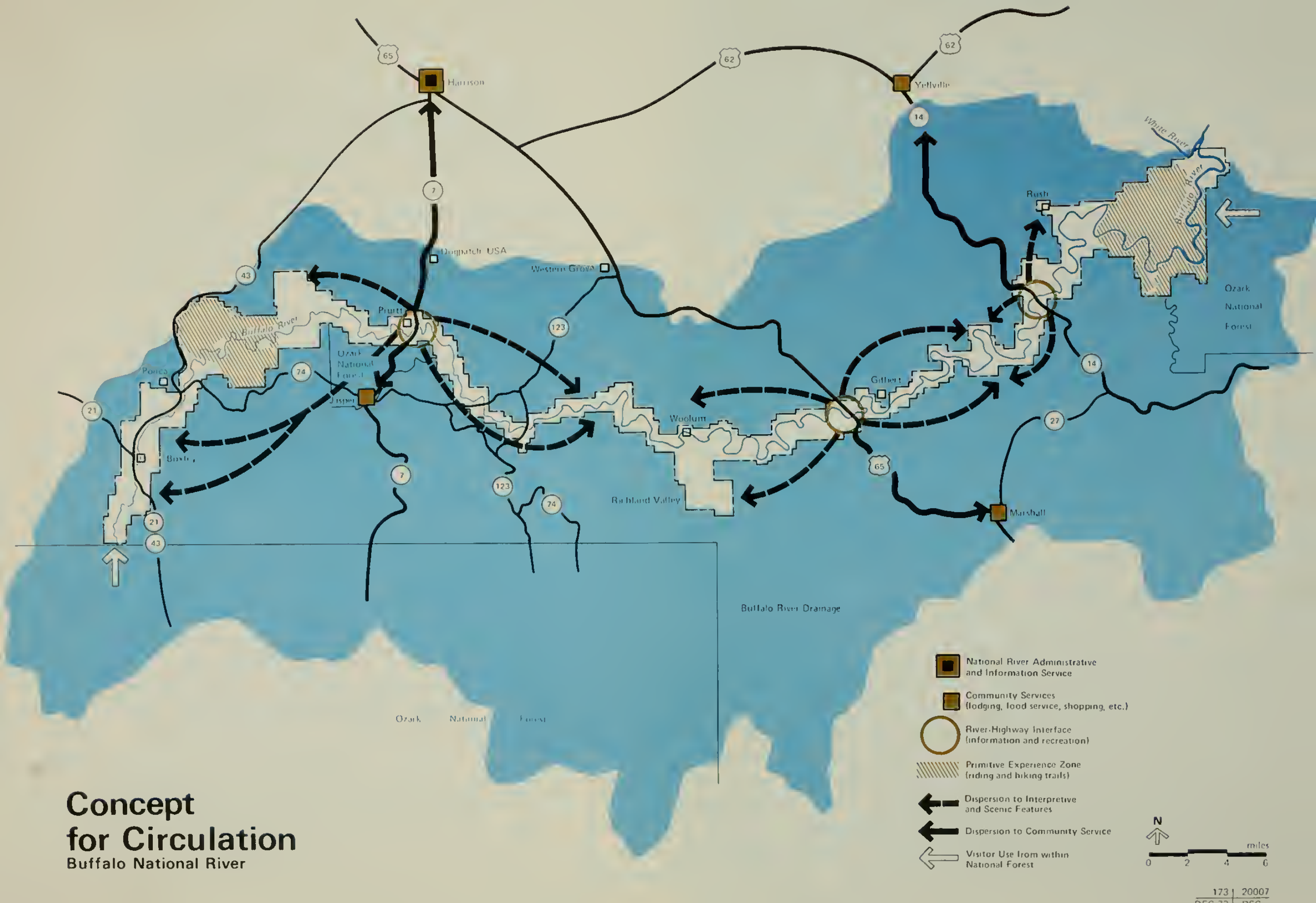
Floating and River Camping – Since the main focus is on the river, all visitors who spend some time in the area will be encouraged to experience the river in close contact – canoeing, johnboat fishing, swimming, wading, studying aquatic nature, or just sitting and watching.

As with the other river activities, floating will be an opportunity for personal involvement. Although it may be done in groups, boats should be small enough to require participation by each occupant – heightening the individual's sense of discovery.

Virtually the entire length of the river can be floated, in season. River access at selected points will be provided for floaters. This access will usually be a minor road to a simple graded or asphalt parking area at the riverbank. Sanitation facilities and another more permanent parking area will be provided above the floodplain.

Concept for Circulation

Buffalo National River



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Primitive camps and rustic shelters will be provided at and between access points at locations convenient to overnight stops. Most primitive camps will provide as a minimum, drinking water, pit toilets, and carry-out trash cans. The shelters will utilize existing structures, when suitable buildings are acquired and an adequate management and maintenance arrangement is made.

With the exception of the Lower Buffalo Primitive Area, access points will be located within an easy day's float from each other and at points presently reachable by existing roads. In more intensively developed recreation sites, access points will be closer together because short trips will be part of the interpretive and recreation experience.

Boat rentals will continue to be provided by float-outfitters, as well as car shuttle, guide service, camping gear, and minor supplies. The larger operations at Tyler Bend and Buffalo Point will require storage of float equipment near the river, at least during the seasons of heavy use. Adherence to uniform standards of safety, skill, sanitation, and equipment will be required through a permit system. Motors on boats will be excluded in the Hemmed-in-Hollow Primitive Area. Small motors (less than 10 horsepower) have been regularly used on the lower portions of the river, and their use will be continued.

Methods will be devised to encourage limited impact by river users; this will be accomplished through interpretive techniques and registration services.

Hiking — Hiking is another good way to see the Buffalo River. During times of low water in certain sections, it is the only way. Although the summers are hot and humid, hiking is becoming increasingly popular. Trails will be constructed to provide opportunities for hiking the entire length of the river and to link the various primitive camps and hostels that will also serve the river floater. Short trails to outstanding scenic features and loop trails near heavy-use areas will be developed. Trail vehicles will be prohibited because their use is incompatible with the tranquil setting that is being sought. Some camps will be established for the overnight hiker in areas where the boundaries extend some distance from the rivershore. Connecting links with existing or proposed trails in Ozark National Forest will be sought.

Horseback Riding — Trails for both hikers and horseback riders will be developed in little-used areas, but in heavily used areas, these trails will be separate to avoid conflict. Most horse use is by private owners and

stables outside the boundary. If additional facilities are not developed outside the boundaries, then horse concessions will be considered for the developed areas.

Entrance Fees

Fees will not be collected. There are too many access points in the national river that make it impossible to separate non-park travelers from the park visitors. Visitor user fees will be charged in accordance with National Park Service policies.

Major Visitor Sites

These will be located at Pruitt, Tyler Bend, and Buffalo Point. Information and orientation services will also be provided here. Each will provide primitive camping, picnicking, swimming, sanitary facilities, and interpretive opportunities, as well as access for floaters and fishermen. Buffalo Point has vehicle camping, dining, and lodging facilities. These will remain as long as adequate replacements outside the park are not available.

Beginning at the upper end of the river, certain sites are appropriate for application of development concepts:

Boxley is a scenic area, with roads for viewing the blend of forested hills and agricultural valley lands. Historic resources will be interpreted. A proposed bicycle trail near the river would provide recreation, as well as an opportunity to experience the area's resources.

Lost Valley is outstanding for hiking and nature study. Picnicking and nature interpretation will be offered. A ranger station here will be the base of protection operations for the upper river down to Hemmed-in-Hollow Primitive Area.

Ponca is a major floater's access site in the spring and a sightseer's scenic-viewing and historic-interest area year-round. Facilities will serve the needs of both.

Steel Creek includes buildings and facilities that could be developed as an environmental education center. These facilities will also be used as a shelter for trail users and canoeists in the primitive area. As a trailhead, this area provides access to spectacular Big Bluff and to Hemmed-in-Hollow Primitive Area.

Hemmed-in-Hollow Primitive Area will be accessible only by foot, canoe, or horseback. It is an area of richly vegetated, rugged slopes, a

200-foot waterfall, and scenic streams with interesting rapids and rock formations. A trail system will provide access.

Kyles Landing will be the first access below Ponca after a full day's float. The site is also a trailhead for the Hemmed-in-Hollow Primitive Area. A primitive camp with sanitary facilities will serve both hiker and floater. Structures acquired will be utilized for group camps and environmental education, and will also be used as shelter for trail users and canoeists.

Erbie gives access to Beauty Cave as well as to the Buffalo River. The open fields and mountains are suited to horseback riding and hiking. Beauty Cave, it is said, is as spectacular as any cave in the Ozark plateau. It is unusual because of its enormous rooms (one is approximately 700 feet in length by 70 feet in height) and its gypsum formations. Because there are many developed caves in the region, it is recommended that Beauty Cave remain primitive, with only limited access. Public access will be via guided tour. Some visitor safety facilities, such as handrails, may be required but they are to be handled in a way that preserves the primitive character of an "undiscovered" cave. A primitive camp is planned near the river. Erbie is also along the proposed scenic drive from Pruitt to Compton.

Pruitt is located on the popular scenic highway, Arkansas 7, between Harrison and Russellville. Dogpatch USA lies only 4 miles north, and it is expected that many visitors attracted to this popular amusement park will also visit the Buffalo National River at Pruitt. Visitors will stay at Pruitt only a short time. The interpretive message here should emphasize the purpose, and cultural and natural aspects of the river. Pruitt will be a district management site, covering the upper third of the national river.

Richland Valley is an isolated pastoral area to be preserved through scenic easements. Because of its isolation, the valley is little disturbed by modern technology. Access from the south is by steep and winding dirt roads, of a type that perpetuates the rustic character of the valley and therefore should not be significantly improved. Point Peter is adjacent to this valley; it will be made accessible for scenic viewing of the local area and the river basin.

Tyler Bend has been selected as the second of the three major developed areas because it is easily reached from a major highway, U.S. 65, and has a variety of forested and open areas, with topography

suitable for a variety of developments. The river is sufficiently deep for floating year-round and is bordered by scenic cliffs. This area is very large with open fields and farm buildings and this character should be retained. District management facilities will be situated here to serve the middle third of the national river.

Gilbert is a community outside the national river that is now providing limited services for river users. Floaters find this a convenient terminus for trips from Tyler Bend. Boat access and picnicking will be continued at their present locations.

Buffalo Point (formerly Buffalo River State Park) offers swimming, boating, hiking, picnicking, camping, dining, and lodging, and will continue to do so. It is reached via Arkansas Highway 14, an increasingly important recreation route serving Blanchard Springs Caverns, Ozark Folk Culture Center, regional reservoirs, and several campgrounds in the adjacent Ozark National Forest. It will be the third of the major developed sites. The visitor-use concept will be expanded to include a broader range of interpretive functions. This is an excellent area for trips in canoe or johnboat, and boat access will continue at the highway bridge, with added access and development upriver. Interpretive river float trips will be featured here. Because this site is isolated from adjacent communities and lodging facilities, the lodging, campground, and restaurant will continue. Patterns of use will be studied to determine this area's long-range visitor needs. District management facilities will be based here for the lower third of the national river.

Rush is a mining ghost town that will have historical interpretation and protection. Nearby, the mouth of Rush Creek is important as the takeout point for an easy day's float from Buffalo Point and the starting point for a 2-day wilderness float to Mouth-of-Buffalo. Boat access and a primitive camp will be provided for these activities.

Mouth-of-Buffalo is where the Buffalo River enters the White, at the end of the national river boundary and the Lower Buffalo Primitive Area. Presently, floaters put in upstream, often at Buffalo Point or Rush. When they reach the rivermouth they have no convenient way back to their point of origin. They must either continue many miles down the White River or maneuver across its swift water to Buffalo City on the opposite shore. There is also some use that originates on the White River and moves up the Buffalo using motor-powered boats. Two solutions are possible: from the north a 6-mile access road could be

constructed from Old Buffalo to the rivermouth, or from the south, existing roads could be improved to join with those now serving Ozark National Forest. This plan recommends the national forest route to the south. Even though this is a more distant return to Buffalo Point and Rush, it relates better to the national forest and its visitors, and will require less new construction.

Lower Buffalo Primitive Area was heavily logged a few years ago but is rapidly recovering. It will be managed to allow it to return to primitive conditions. Johnboat floaters through this section often use light motors to return upstream. Where feasible, trails will utilize existing unimproved roads.

MANAGING THE RESOURCE

The Buffalo National River is a "shoestring" park — a winding river in a narrow strip of land comprising only 11 percent of the total watershed. The land will become subject to National Park Service management as rights are acquired. Its pastoral/natural character will be reasonably assured of preservation, but continuation of the river in its pure and attractive state depends upon the entire watershed; activities and industries upslope affect the water quality, i.e., chemical purity, bacteria counts, and sediment load.

The act establishing the national river provides some tools by which future development of the watershed can be influenced and controlled through restrictions placed on dam and water development projects.

The Forest Service will continue maintaining the integrity of its part of the watershed. It was involved in this long before the national river idea occurred. The Soil Conservation Service has similar goals, including that of discouraging the use of highly persistent chemicals in insect or plant control, and will especially assist the National Park Service in assuring that proper agricultural practices are applied within the national river. A demonstration farm is planned at Tyler Bend where the National Park Service will illustrate environmentally compatible farming techniques to residents and visitors. Cooperation with the U.S. Department of Agriculture in this venture could prove especially beneficial. Because a third of the basin will be in Federal management and/or ownership, the basin is a potential candidate for inclusion in the national hydrological benchmark program of the U.S. Geological Survey. This action would also provide for frequent monitoring of the basin's hydrologic characteristics, so that any change could be noted, and if man-induced, perhaps alleviated.

Construction, land-clearing, and logging are all activities that must be done in sympathy with the purposes of the national river. Control could probably best be accomplished on the non-Federal lands through county and State agencies. Such measures were adopted jointly at Federal, State, and county levels in the Lake Tahoe basin of California and Nevada in order to preserve the clarity of those waters. A zoning plan would be advantageous in reducing potential improper uses such as uncontrolled development on roadsides contiguous to the national river.

Wild animals and birds range beyond the narrow strip of land that is the national river. The National Park Service will cooperate with the Arkansas Game and Fish Commission in managing the wildlife. In this regard, the Service objective is not only to produce maximum hunting opportunity or yield, but to blend this use with others in the national river; the U.S. Bureau of Sports Fisheries and Wildlife has observed that the wildlife habitat in the basin is of moderate value and therefore it is proper that the National Park Service not overemphasize this use when other resources, including that of float fishing, are of national significance. Improvement of game habitat for hunting will be undertaken where it can be coordinated with other programs such as improvement of scenic or general wildlife habitat and maintaining open fields.

Firearms areas will not be established, in order to encourage opportunities for wildlife observation. Away from developed sites, and during regularly established seasons, hunting is an appropriate area use. Reintroduction of selected former native wildlife species is desirable.

Fishery management presents something of a paradox. A plan was once presented to increase the low-flow state of the main river through a series of small upstream reservoirs. With it, it was calculated that stream-fishing would increase by 26 percent, to 34,500 man-days. But what would such a program do to the concept of the Buffalo River as one of America's last samples of an untamed free-flowing stream? If *quality* is the guidepost to the special recreation experience to be provided here, should not even the catch-oriented fisherman take the river on its own terms and experience the vagaries of nature rather than "fixing it" to suit his pleasure? Occasional disappointments may result without an intensive fish-management program, but certainly the sense of adventure and self-sufficiency will not suffer. Once again, the Park Service will work closely with the Arkansas Game and Fish Commission in achieving the proper program.

It is essential that increased recreational use of the watershed does not contaminate the river. The National Park Service will apply the best and

soundest techniques within its area of management in sewage treatment and waste disposal. Backcountry sanitation and litter-prevention programs will be pursued.

The river's natural setting must be maintained; selected open areas will be maintained for fishing and boating habitat, as well as general scenic enhancement. Recreation facilities and support structures must be situated where they will blend with their surroundings and any obtrusive appearance from the river will be minimized. The natural riverbank cover of trees and shrubs will be maintained where presently intact and allowed to revegetate where denuded.

Fragile formations in caves are especially susceptible to vandalism and thoughtless destruction. They should be experienced on a guided-tour basis only; other caves with less spectacular features could, in many cases, be left open.

Resources management plan elements must be regarded as tentative, because the National Park Service presently has only limited access to the national river. Previous studies and regional knowledge have been most helpful, but until complete inventories of the resources can be made, and until sharper definition of the vital questions can be formulated and answers obtained, deliberation in proceeding is required. In particular:

Extensive and intensive monitoring of water quality should be continued and evaluated.

Archeological and historical inventories should be completed, in compliance with Executive Order 11593, not only for interpretive purposes, but to salvage any artifacts prior to construction.

Monitoring of river use must be started as a first step in determining carrying capacities and appropriate development concepts for various experiences.

The origin of clearings, whether created by aboriginal or later settlers, should be determined.

The nature of the plant succession in the area, the role of fire, and the extent and effect on forest types of former logging activities should be known.

An early flood-warning system should be initiated for visitor safety.

More complete knowledge of the status of various mammals is needed to determine the correct hunting level to be allowed and especially what protection certain rare animals require.

Staff and Administrative Facilities

Administrative Headquarters will be located at Harrison, Arkansas, to provide liaison with other regional land-managing agencies based there and to take advantage of the most convenient road access to the national river. The headquarters facility will have staff offices with a minimal public reception function. Finally, staff families will be able to easily find housing, educational, shopping, and medical services.

Management Districts will be operated from Pruitt, Tyler Bend, and Buffalo Point to provide onsite supervision of visitor contact, maintenance, fire control, and visitor safety. Support facilities for staff and visitor services will be constructed at these points, but existing buildings will be used if they are in adequate condition and are located within a reasonable distance.

Staffing will include management and administrative staff, lands personnel, resources management specialists, interpreters (with varied backgrounds in nature, history, and recreation), rangers, maintenance workers, and engineers. Some local persons with special talents would assist in interpretive programs on an occasional basis, and a special arrangement would be effected to operate the demonstration farm.

Cooperation

The staff will work closely with adjacent government units in all programs. Jurisdiction is presently proprietary but concurrent jurisdiction will be sought from the State of Arkansas, and cooperative fire protection agreements for both building and forest fires will be made with other agencies.

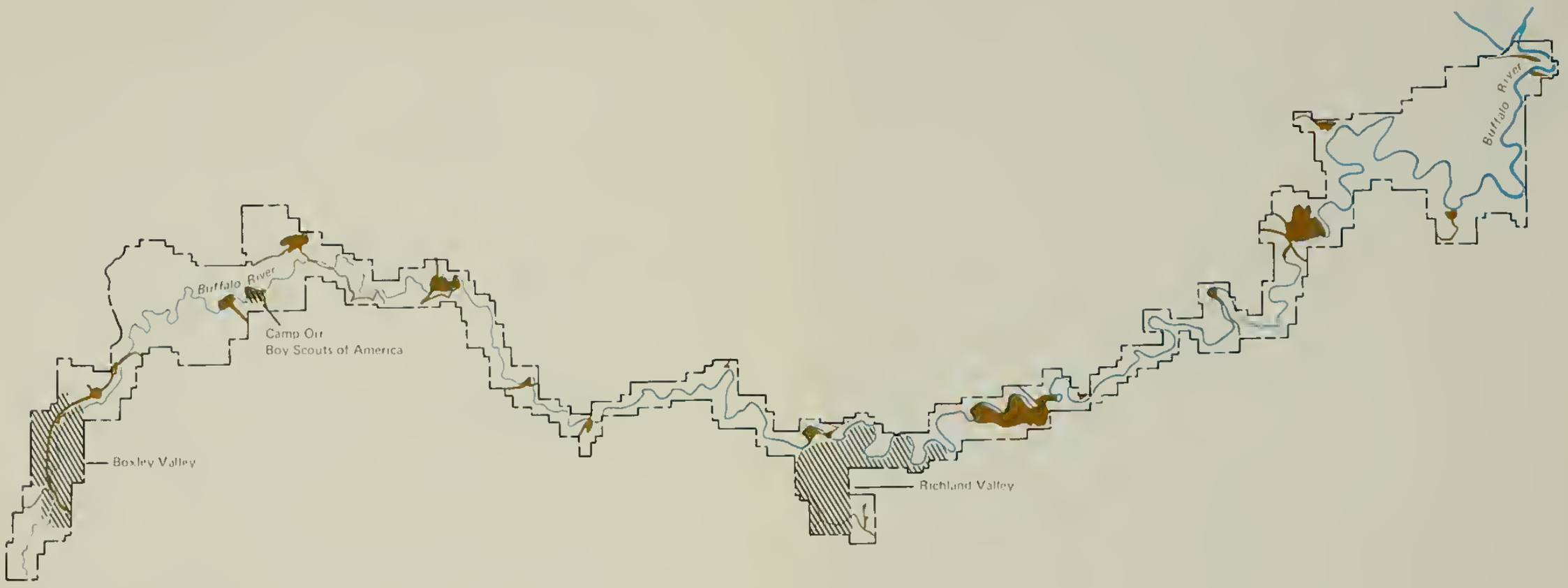
Boundaries and Lands

Three considerations have guided boundary location:

Adequate territory must be included to preclude private development directly intrusive on the river scene.

Undeveloped tracts of adequate size should provide a realistic wilderness opportunity in both the upper and lower river areas.

Terrain suitable for environmentally sensitive development of visitor facilities must be available.



Zoning Plan

Buffalo National River

Private-Use Zone
Public Development Zone
Preservation Zone

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These requirements are well served by the existing boundary, except for a few sites where the river appears to swing too close to the present boundary to assure protection from private development. Onsite inspection will be made to determine whether boundary adjustments are necessary. If they are, reduction elsewhere will be required to maintain the acreage within the authorized limitation. The act establishing the Buffalo National River authorizes such minor boundary adjustments.

Several provisions of the authorizing act specified procedures to be followed in acquiring lands. Based on ultimate land use, zones have been set up to establish the interest in land to be acquired.

Development Zone – 8,190 acres of land are needed to develop necessary visitor and administrative facilities. Fee acquisition would be required prior to any construction. Generally, these are the Class II lands of the land classification plan.

Conservation Zone – 78,133 acres that include the principal scenic, natural, scientific, and recreational lands in which ultimate fee ownership is required, but in which use and occupancy rights may be granted to property owners if they so elect. Generally, these lands are Classes IV, V, and VI of the land classification plan, plus those parts of Class III not included in the private-use zone.

Private-Use Zone – 9,407 acres, including some farmlands that may continue in private ownership, subject to scenic controls and necessary rights-of-way for roads and trails as long as water and air pollution are not increased. The designation of this zone applies only to the Boxley valley, Richland valley, and the Boy Scout camp – all of which are Class III lands on the land classification plan.

It is anticipated that lands owned by the State of Arkansas, except for certain improvements, will be donated to the Federal Government as provided for in the act. This applies principally to Buffalo River State Park, Lost Valley State Park, lands of the Arkansas Game and Fish Commission, and tax-delinquent lands held by the Arkansas State Parks Commission.

Jurisdiction over lands now within the Ozark National Forest encompassed by the Buffalo National River will be transferred to the Department of the Interior, as expressed in the congressional hearings. These areas are near Jasper and the rivermouth, and include both private and Federal lands. Jurisdiction will also be transferred for the 500 acres of public domain lands administered by the Bureau of Land Management. This acreage consists of a number of small parcels in Searcy and Newton Counties.

A formal statement establishing the area will be issued in conjunction with a dedication ceremony at a later date, when significant amounts of land have been acquired and the area is on the threshold of its service to the people as a park.

Finally, review of the area is required to determine potential tracts suitable for formal designation as wilderness. A Presidential recommendation to Congress is to be made by March 1, 1975.

Phases of Implementation

The master plan proposes development of the Buffalo National River that will take a number of years. Interim phases of operation are necessary to achieve full development and use.

The *first phase* covers the initial years of operation, encompassing visitor use of resources, but with few facilities. During this phase, it is proposed to provide information for visitors through temporary manned stations beside the main highways. In this manner, visitors can find out where they can go and what they can do. Essential safety and protection services will be provided, as well as onsite interpretation. Buffalo Point, with existing facilities, will continue to provide visitor services and recreation.

In the *second phase,* construction of the major development sites of Tyler Bend and Pruitt will proceed.

In the *third phase,* the above two major development sites are to be operational, and construction will proceed on the next priority sites: major river access points, Rush, and Buffalo Point.

During the *fourth phase,* all minor sites providing boat access, primitive camps, and picnic areas will be constructed. Upon completion of this construction all visitor and management programs will be operational.

It is important to note that this schedule must be coordinated with that provided in the authorizing act, in the first 5 years, for which levels of maximum expenditure are established, but we may not be able to meet these levels because of the injunction issued by the U.S. District Court in May 1973. This could well require new legislative authority, setting back the development schedule a year or two.

Re-evaluation of park management and visitor use at Buffalo National River is an ongoing process. During the final phase of implementing the present master plan, a re-examination of the plan will be made, based on the experience gained, increased options afforded by greater landownership, and the latest trends in park use by visitors, and then revisions will be made to the master plan, if warranted.

Appendixes

A: MANAGEMENT OBJECTIVES

The following objectives have been formulated to serve as a guide for management of the Buffalo National River according to purposes written in the legislation that established the area.

General Management

Buffalo National River is categorized as a National Park Service "recreation area."

Management of the entire area will be headquartered at a site where close coordination can be made with local communities and the recreation area, and where park staff services can be obtained easily. District land management will be located where the most efficient protection of resources and visitors can be accomplished. Three districts will be established.

Within the river region, support and encouragement will be given to private business serving visitor needs. Private development outside the national river will be given priority over establishment of concessioner operations within the boundaries.

Land will be acquired as stated in legislation, with first priority being given to hardship areas, and then land in planned, developed areas. Ultimately, all rights required within the boundaries will be acquired.

The amount and degree of developed facilities should be located with consideration given to high water during floodstage. Facilities placed below high water must be designed for inundation.

Provide for the collection of appropriate user fees.

Ensure that staffing is commensurate with demands of the established program standards.

Issue special-use permits and make periodic evaluations to determine the validity of continuing their use for grazing and agriculture.

Management of the private-use zone will be consistent in maintaining scenic integrity of the area, as it was at the time of acquisition.

Primitive areas will be evaluated for possible inclusion within the wilderness system.

Resource Management

Encourage and administer a viable and purposeful research program.

The river will be managed to preserve the natural river scene and maintain a free-flowing, non-polluted river, while providing significant recreational opportunities.

Study the existing road systems to determine a viable system compatible with the use of Buffalo National River.

The area will be managed for perpetuation of the resources, while providing recreation for visitors in such a manner that the impact on the environment will be minimized.

Complete the resource management plan now underway.

Extirpated species will be reintroduced where feasible.

Open fields will be maintained where scenic and wildlife habitat will be enhanced.

Cave-evaluation studies will be made to determine the potential use.

Visitor Use

Coordinate regional planning with other agencies and organizations, with particular regard to encouraging development outside the river boundaries, environmental quality, fire control, and public information.

The focal attraction of visitor use will be water-oriented recreation. A broad spectrum of activities, including canoeing, boating, hiking,

swimming, picnicking, camping, fishing, hunting, sightseeing, and horseback riding, will be in keeping with area purposes.

Encourage backcountry use, including motor nature travel, hiking, and boating, within established carrying capacities.

The interpretive theme will emphasize the Buffalo River — its esthetic effects, recreational aspects, and aquatic ecology; the concept of a free-flowing stream preserved to flow unhampered is also important; finally, there is a kaleidoscope of other subthemes related to the forests, animals, rocks, history, and Indian past of the land.

Encourage the utilization of the river's resources by schools for environmental teaching areas and cooperate with them in both offsite and onsite program assistance.

Designate one-way drives and appropriate support visitor-services facilities.

Concession operations will be permitted at Tyler Bend and Buffalo Point. Concession permits will be issued to canoe and johnboat operators utilizing the Buffalo River during 1973. No additional permits will be issued, pending carrying capacity studies.

Solid-waste disposal will be handled in accordance with U.S. Public Health Service, Environmental Protection Agency, and State of Arkansas Health Department standards and regulations.

Cemeteries and churches will continue in operation under special-use permit.

Safety will be an important factor in all recreational use, particularly in relation to high water and unexpected flooding.

All utility lines will be placed beneath the surface, as funding becomes available. All new development will have utility lines below the surface.

Hunting will be permitted, except in developed areas and major visitor-use corridors, in accordance with an agreement with the State of Arkansas.

Carrying capacities will be established for the river and primitive campgrounds.

B: LEGISLATION

Public Law 92-237
92nd Congress, S. 7
March 1, 1972

An Act

To provide for the establishment of the Buffalo National River in the State of Arkansas, and for other purposes.

Buffalo National River, Ark. Establishment.

Be it enacted by the Senate and House of Representatives of the United States of America in Congress assembled. That for the purposes of conserving and interpreting an area containing unique scenic and scientific features, and preserving as a free-flowing stream an important segment of the Buffalo River in Arkansas for the benefit and enjoyment of present and future generations, the Secretary of the Interior (hereinafter referred to as the "Secretary") may establish and administer the Buffalo National River. The boundaries of the national river shall be as generally depicted on the drawing entitled "Proposed Buffalo National River" numbered NR-BUF-7103 and dated December 1967, which shall be on file and available for public inspection in the offices of the National Park Service, Department of the Interior. The Secretary is authorized to make minor revisions of the boundaries of the national river when necessary, after advising the Committees on Interior and Insular Affairs of the United States House of Representatives and the United States Senate in writing, but the total acreage within such boundaries shall not exceed ninety-five thousand seven hundred and thirty acres.

Lands and waters, acquisition.

SEC. 2. (a) Within the boundaries of the Buffalo National River, the Secretary may acquire lands and waters or interests therein by donation, purchase or exchange, except that lands owned by the State of Arkansas or a political subdivision thereof may be acquired only by donation: *Provided*, That the Secretary may, with funds appropriated for development of the area, reimburse such State for its share of the cost of facilities developed on State park lands if such facilities were developed in a manner approved by the Secretary and if the development of such facilities commenced subsequent to the enactment of this Act: *Provided further*, That such reimbursement shall not exceed a total of $375,000. When an individual tract of land is only partly within the boundaries of the national river, the Secretary may acquire all of the tract by any of the above methods in order to avoid the payment of severance costs. Land so acquired outside of the boundaries of the national river may be exchanged by the Secretary for non-Federal lands within the national river boundaries, and any portion of the land not utilized for such exchanges may be disposed of in accordance with the provisions of the Federal Property and Administrative Services Act of 1949 (63 Stat. 377; 40 U.S.C. 471 et seq.), as amended. With the concurrence of the agency having custody thereof, any Federal property within the boundaries of the national river may be transferred without consideration to the administrative jurisdiction of the Secretary for administration as part of the national river.

Retention rights.

(b) Except for property which the Secretary determines to be necessary for the purposes of administration, development, access or public use, an owner or owners (hereafter referred to as "owner") of any improved property which is used solely for noncommercial residential purposes on the date of its acquisition by the Secretary or any owner of lands used solely for agricultural purposes (including, but not limited to, grazing) may retain, as a condition of the acquisition of such property or lands, a right of use and occupancy of such property for such residential or agricultural purposes. The term of the right retained shall expire upon the death of the owner or the death of his spouse, whichever occurs later, or in lieu thereof, after a definite term which shall not exceed twenty-five years after the date of acquisition. The owner shall elect, at the time of conveyance, the term of the right

reserved. The Secretary shall pay the owner the fair market value of the property on the date of such acquisition, less the fair market value of the term retained by the owner. Such right may, during its existence, be conveyed or transferred, but all rights of use and occupancy shall be subject to such terms and conditions as the Secretary deems appropriate to assure the use of such property in accordance with the purposes of this Act. Upon a determination that the property, or any portion thereof, has ceased to be used in accordance with such terms and conditions, the Secretary may terminate the right of use and occupancy by tendering to the holder of such right an amount equal to the fair market value, as of the date of the tender, of that portion of the right which remains unexpired on the date of termination.

"Improved property."

(c) As used in this section the term "improved property" means a detached year-round one-family dwelling which serves as the owner's permanent place of abode at the time of acquisition, and construction of which was begun before September 3, 1969, together with so much of the land on which the dwelling is situated, the said land being in the same ownership as the dwelling, as the Secretary shall designate to be reasonably necessary for the enjoyment of the dwelling for the sole purpose of noncommercial residential use.

Hunting and fishing, rules and regulations.

SEC. 3. The Secretary shall permit hunting and fishing on lands and waters under his jurisdiction within the boundaries of the Buffalo National River in accordance with applicable Federal and State laws, except that he may designate zones where and establish periods when, no hunting or fishing shall be permitted for reasons of public safety, administration, fish or wildlife management, or public use and enjoyment. Except in emergencies, any rules and regulations of the Secretary pursuant to this section shall be put into effect only after consultation with the Arkansas Fish and Game Commission.

Water resource projects, restriction.

SEC. 4. The Federal Power Commission shall not license the construction of any dam, water conduit, reservoir, powerhouse, transmission line, or other project works under the Federal Power Act (41 Stat. 1063), as amended (16 U.S.C. 791a et seq.), on or directly affecting the Buffalo National River and no department or agency of the United States shall assist by loan, grant, license, or otherwise in the construction of any water resources project that would have a direct and adverse effect on the values for which such river is established, as determined by the Secretary. Nothing contained in the foregoing sentence, however, shall preclude licensing of, or assistance to, developments below or above the Buffalo National River or on any stream tributary thereto which will not invade the area or unreasonably diminish the scenic, recreational, and fish and wildlife values present in the area on the date of approval of this Act. No department or agency of the United States shall recommend authorization of any water resources project that would have a direct and adverse effect on the values for which such river is established, as determined by the Secretary, nor shall such department or agency request appropriations to begin construction on any such project, whether heretofore or hereafter authorized, without, at least sixty days in advance, (i) advising the Secretary, in writing, of its intention so to do and (ii) reporting to the Committees on Interior and Insular Affairs of the United States House of Representatives and the United States Senate, respectively, the nature of the project involved and the manner in which such project would conflict with the purposes of this Act or would affect the national river and the values to be protected by it under this Act.

Administration.

SEC. 5. The Secretary shall administer, protect, and develop the Buffalo National River in accordance with the provisions of the Act of August 25, 1916 (39 Stat. 535; 16 U.S.C. 1 et seq.), as amended and supplemented; except that any other statutory authority available

to the Secretary for the conservation and management of natural resources may be utilized to the extent he finds such authority will further the purposes of this Act.

Area review; report to President.

SEC. 6. Within three years from the date of enactment of this Act, the Secretary shall review the area within the boundaries of the national river and shall report to the President, in accordance with subsections 3(c) and 3(d) of the Wilderness Act (78 Stat. 890; 16 U.S.C. 1132 (c) and (d)), his recommendation as to the suitability or nonsuitability of any area within the national river for preservation as a wilderness, and any designation of any such area as a wilderness, shall be accomplished in accordance with said subsections of the Wilderness Act.

Appropriation.

SEC. 7. For the acquisition of lands and interests in lands, there are authorized to be appropriated not more than $16,115,000. For development of the national river, there are authorized to be appropriated not more than $283,000 in fiscal year 1974; $2,923,000 in fiscal year 1975; $3,643,000 in fiscal year 1976; $1,262,000 in fiscal year 1977; and $1,260,000 in fiscal year 1978. The sums appropriated each year shall remain available until expended.

Approved March 1, 1972.

LEGISLATIVE HISTORY:

HOUSE REPORT No. 92-807 accompanying H. R. 8382 (Comm. on Interior and Insular Affairs).
SENATE REPORT No. 92-130 (Comm. on Interior and Insular Affairs).
CONGRESSIONAL RECORD:
Vol. 117 (1971): May 21, considered and passed Senate.
Vol. 118 (1972): Feb. 7, considered and passed House, amended, in lieu of H. R. 8382.
Feb. 9, Senate concurred in House amendment.

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E: WATER QUALITY

Chemical analyses of water quality of the Buffalo River near St. Joe, Arkansas:

	Number of Samples	Maximum	Minimum	Average
		In Parts-Per-Million		
Dissolved solids	57	219	80	127
Chlorides	57	5.8	1.5	3.4
Sulfates	57	16	3.2	5.6
Nitrates	57	5.7	0.1	2.0

— from Table IV-2, "Water Resources Study, Buffalo River Basin, Arkansas" by Public Health Service, 1964, in Appendix G of *Buffalo River Basin, Arkansas — Interim Report* by U.S. Army Corps of Engineers

The following tables summarize data reported by the U.S. Geological Survey:

Chemical Constituent	October 18, 1949	Average 10/58 to 9/59
Mean discharge (CFS)	229	1165
PH	7.8	—
Specific conductance (micro-ohms)	229	209
Silica (PPM)	5.9	3.2
Iron (PPM)	0.02	0.0
Calcium (PPM)	37	37
Magnesium	3.3	4.2
Sodium	2.22	2.3
Potassium	1.4	1.0
Bicarbonate	126	126
Sulfate	5	5.1
Chloride	2.5	3.2
Floride	0.1	0.1
Nitrate	1.4	1.1

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